5. [4 points] Let $\alpha$ and $\beta$ be constants such that
   - $\ln(\alpha) = 2$
   - $\ln(\beta) = 5$

   Find the value of $\ln(\alpha^6 \beta^{-3} e^{25})$. Your answer should **not** include $\alpha$, $\beta$, or $\ln$.

\[
\ln(\alpha^6 \beta^{-3} e^{25}) = 
\]

6. [6 points] Let $P(x)$ be a polynomial with the following properties:
   - $P(x)$ only has zeros at $x = -3, -1, 2$
   - $P(x)$ has degree 4
   - The graph of $P(x)$ passes through the points $(-4, -36)$ and $(-2, -8)$

Find a formula for $P(x)$. You do not need to simplify your answer.

\[
P(x) = 
\]